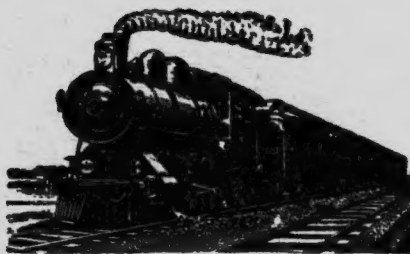


Dominion School Telegraphy and Railroading

TORONTO, ONTARIO



PRACTICAL INSTRUCTIONS AND SPECIAL LECTURES IN

**RAILROAD AND COMMERCIAL TELEGRAPHY
FREIGHT, TICKET, BAGGAGE AND
GENERAL STATION WORK**

SECOND EDITION

Instruction Paper with Test Questions

TELEGRAPHY

PART 4

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HOW TO STUDY.

The lessons are divided into parts and numbered, and are only supplied to the student as he progresses with his studies. Study a few pages at a time. Do not skip from one section of the paper to another. If there are any statements you do not understand, ask the instructor, or drop us a card or letter, advising what section and page you are having difficulty with, and we will explain the matter in detail. Review thoroughly, and write out the answers to the test questions at the end of this paper, and send or hand in your work for criticism. Your class letter and number is given you on your certificate of enrollment, and it is important that you put this on your examinations, as well as any letters you write to the schools. Failing to write this on, will cause delay in answering letters or returning examination work. Send one examination at a time. Don't write out the examination questions themselves. Use the number of the questions and write out your answer. In writing the answers, simply head your paper thus:—

Answers to Test Questions. Telegraphy Part 1.

John Smith, G.D. 215,

440 Delaware Ave.,

Toronto, Ont.

Feb. 14/11.

We desire to get in close touch with you in your studies, and would ask that you keep us informed regarding your progress and any difficulties you may meet with in your studies.

BC

385.207

DS8

pt 4

RAILWAY TELEGRAMS.

Railway telegrams or messages are those which are sent and received between officials, agents and other employees, and pertain strictly to business of the Company; no charge is made, and no check appears on the message in the same way as it is in a commercial message.

The telegram must be brief and concise as possible, and as a consequence, many abbreviations are used. For instance, if you are sending a railway telegram to the Agent at Woodstock and the office call was "W," you would address the message using the abbreviation for Agent—Agt., and for Woodstock the office call—W. The address would then be transmitted thus:— To Agt. W. In addressing a message to the Superintendent of the road, you would simply give his initials and the office call, whatever it might be. Some operators prefer, however, to spell out the full name, together with the name of the place. If you were sending a message to an official that would be off your local division, it would be necessary for you to transmit the full name, together with his address. Thus, if you were working at Woodstock and wished to send a message to T. Collins, the Superintendent at Smith's Falls, you would address the message as follows:—T. Collins, Smith's Falls. In sending messages to officials at Montreal, where it would be necessary to have them repeated from Toronto, you would always give the full names and addresses.

Each message sent and received must show on its face from which office it was sent, the personal signals of both the sending and receiving operators and the time sent and received. As the sending operator always gives his personal sign first, the receiving operator writes it down, and when the receiving operator has finished a message, he acknowledges same by saying O. K. and giving his personal sign, which he writes on his own message, as well as the time of day it was received. When the sending operator hears him give his personal signal, he would mark it down on his copy, together with the time of day it was sent.

Telegrams addressed to persons on trains, must be enclosed in sealed envelopes, as the contents must be kept strictly confidential. It would not be necessary, however, to enclose a message addressed to Trainmen in this manner.

RAILWAY TELEGRAMS—Continued

The proper order of transmitting a railway message is as follows:—

- 1st—Operator's personal signal.
- 2nd—Place from and date. (The G. T. R. follow this by the word filed, together with the time, as "filed 5:10 p.m.")
- 3rd—The address.
- 4th—The body or contents.
- 5th—Signature.

NOTE.—Some operators in sending a message give their office call first, then their personal signal, etc.

It is sometimes necessary when messages are being sent through a certain office to be repeated (such as sending a message from London to Montreal through Toronto), to give the number of words in the body of the message, which is known as the check; but in order to distinguish this check from a commercial paid message, the number of words is followed by the letters R. S.—thus 20 R. S. means 20 words railroad service.

Two railroad telegrams are illustrated herewith. These forms vary somewhat on the different railways, but the difference between the G. T. R. and the C. P. R. or Canadian Northern will be shown. The C. P. R. form is precisely the same as the Canadian Northern, but arranged differently on the blank.

CANADIAN NORTHERN RAILWAY

Operators are required to write all messages in ink.

This form to be used for Railroad Service Messages only.

TELEGRAM

After transmitting telegrams that in their judgment would have served the Company's interest if sent by train mail, operators are required to mail a copy of such messages to the Chief Dispatcher.

A. J. HILLS, Superintendent

Time Filed

The exact sending and receiving time, initials of sending and receiving operator, and signal of office with which business is done, must be plainly noted on face of message.

Office	Time	Sender	Rec'vr
From	Rec'd	To	Sent

Check..... (From) "Galt," March "10," 1911.

(To) "Agt." "Do." (Period)

"Your W. B. 5721 Feb. 15 consignee not known pls advise disposal."

(Sig.) "W. H. SANDO."

Fig. 1

RAILWAY TELEGRAMS—Continued

NOTE.—Letters and figures in brackets [] are written in by sending operator, either at the time of sending a message, or after through sending. Letters, etc., in parenthesis () are transmitted by the sending operator, but not copied by the receiving operator. Letters, etc., underlined are not transmitted, but the receiving operator must write them in their proper place, as shown. Letters, etc., in quotation marks “ ” are transmitted by the sending operator and copied by the receiving operator.

It is important that you study this form carefully. Assuming that you were working at Galt, your office call was "G"; this message was handed to you to be sent to London, the office call being "Do," you would proceed as follows:—Call London and sign your office call—"Do Do Do G." The operator at London would answer his call by repeating "Do;" then you would say "Hr," which means "here" or "here is a message," and the moment he heard this, he would reach for his telegraph blank to copy the message down. After making "Hr," you would transmit the message by giving your personal signal, which in the illustration is "C," under the heading of sender, then the abbreviation for "from" (fm) Galt

10

(to) Agt. Do. (period). The body of the message would then follow, which is the wording between the period and the signature, and at the end you would give the signal (sig) which practically tells the receiving operator that it is the end of the message. This would follow with the signature, as shown.

This form of transmitting a message is the same, no matter how many messages were sent on your local division. Therefore, it is important that you practice the proper way of sending a message and get familiar with the receiving so that you will not write down (Fm) (To) or (Sig) when you are copying in practice work. Practice the message shown, using a different personal signal, and go through the form of this message until you can send it without making an error.

Instructors in Day School check here:—

RAILWAY TELEGRAMS—Continued

USE THIS FORM FOR TELEGRAMS ONLY				OPERATORS WILL WRITE ALL TELEGRAMS IN INK	
SENT TO		TIME SENT	SENDER	RECEIVER	
RECEIVED FROM		TIME RECEIVED	SENDER	RECEIVER	
W.		6.30 P.	Jo	R	
GRAND TRUNK RAILWAY SYSTEM TELEGRAM					
Operators will write the time at which a telegram is handed in for transmission in the blank space after the word "Filed," which word and time must be TRANSMITTED immediately following the date, and must forward to the Superintendent of Telegraph copies of all telegrams which are unnecessarily long, or would have served the Company's interest as well if sent by train mail.					

From. Toronto, Meh 10th, 1911.

Filed 5.10 p.m.

To. W. Wilson, Baggage Agent.

At. London.

Answer my wire date re local 281895 wanted at Toronto.

J. E. QUICK.

Fig. 2

NOTE.—The only noticeable difference in the form of this message is that in transmitting—the word "filed" follows the date, together with the time it was filed, as shown. Outside of this, the information relative to transmitting the other message, as shown for Canadian Northern, would be the same as in this.

The above message illustrates how the receiving operator would fill out his form. The same form would be used in sending a message. Notice on the left hand side the wording "sent to" and "received from." In sending, you write on the upper line your personal signal under the word "sender." The receiving operator's personal signal under the word "receiver." The time of transmitting would be put in under the heading "time sent." In receiving a message, you use the lower line on the left, as illustrated in the message above. In this case, "W" is shown as the office call through which the message was received. The time received is shown at 6.30 p.m. The sending operator's personal signal is "Jo." The receiving operator's personal signal is "R." This message would be transmitted as follows:—

Jo (fm) Toronto

10

Filed 5.10 p.m.

(To) W. Wilson, Baggage Agent, London. (Period).

Answer my wire date re local 281895 wanted at Toronto

(sig) J. E. QUICK.

RAILWAY TELEGRAMS—Continued

In the Day School students are furnished with numerous models of messages, as shown above for practice work. It is important, however, that in case of a student taking up the Home Study, he could make up messages for practice work. These could be made up out of one's head by changing the place the message was being sent from, together with the time it was filed, and changing the address, signature, etc. Practice the G. T. R. message shown above, using your own personal signal, until you can send it without an error. Always bear in mind, that after sending a message, the receiving operator's personal signal, together with the time of day it was sent, must be written on the blank and the message then filed. In receiving a message, the sending operator's personal signal, together with your own, and the time of day it was received is also written at the end of each month, the messages are taken from the file, tied up, labelled with month and year, and put in a box or place provided for the purpose.

Instructors in Day School check here:—

BREAKING IN RAILWAY MESSAGES AND TRAIN ORDERS.

When breaking in railway messages, should you miss the office call of the sending office, say "sine;" the personal signal of the sending operator, say "wo;" the name of the place from which it was sent, say "Fm;" in the date, say "date;" in the name or the initials of the address, say "to;" in the beginning of the body, say "period (.):" in the body give the last word received; in the signature, say "sig."

In practical work, an operator in receiving a message sometimes misses the personal signal of the sending operator or the place from, probably due to the fact of not having his telegraph pad handy, and the sending operator will have started the body of the message. Provided the receiving operator is ready to copy when the sending operator starts at the body of the message, and provided that you heard the address, etc., you would copy the message as it is sent, and when through, say GA FM.

BREAKING IN RAILWAY MESSAGES AND TRAIN ORDERS--Continued

Immediately the sending operator would transmit the place from where the message was sent, and as soon as you receive the information desired, open your key and say "O. K.," giving your personal signal.

In case some office called you, and upon answering they started to send you a message, and if your message pad was not handy, throw your key open until you get the pad, and then say "Ex" for excuse, followed by "GA" for go ahead. This illustrates the advisability of keeping in mind the previous instructions, regarding having your telegraph pads and train orders always ready for use.

It is better to break several times in messages, or train orders rather than make one error, and it is not necessary to sign your office call in doing this, except when two or more offices are copying.

When breaking in train-orders, should you miss the order number, say "no." The other information relative to messages will apply in this case, such as in the address, say "to;" but in train-orders, should you miss the address, you would likely get this information in the body of the order. You seldom hear operators break in train-orders, since they are much easier to copy than messages, and an operator knows, in many cases, what is coming.

The word "bull" is a slang phrase in railroad work, due to an operator getting all mixed up in receiving a message. This word is used, when in receiving a message it was necessary for you to have a portion of it repeated, or when the message was in such a shape that you did not understand it, in which case, you would simply make the mark of exclamation and say "GA another," which would mean for him to go ahead with the message again.

THE REPORTING OF TRAINS.

In order that a despatcher may be able to check the movement of all trains on his division, a form is specially printed with the names of the stations down the centre. This form is known as the "running sheet." On the left hand side of the names of stations, will appear the report of all trains running

THE REPORTING OF TRAINS—Continued

west and north. On the right hand side of the sheet will be shown the report of all trains running east and south. In reporting trains, the only way the despatcher knows on which side of the sheet to write the arrivals and departures is by the **numbers** of regular trains, and the **direction** of extra trains.

On this "running sheet" are extra columns to be used for keeping track of extra trains running in either direction. By keeping track of the movement of trains, the despatcher knows how to issue train orders to the best of advantage.

Rule 222 of the standard railway rules states that operators must record and report the arrival and departure of all trains, as well as the time of passing trains. A train should not be reported until the markers (flags or lights, which designate the rear of the train), have passed the station 300 yards.

The abbreviation for train report shown in Rule 223 is O S, but the actual form of reporting a train is not given. It will be noticed that in the working time-table all regular trains running east and south have even numbers, and all regular trains running west and north have odd numbers. Remember, only regular trains are shown on the time-table and extra trains are not shown, and are only run on special orders given by the despatcher. The old method of reporting a train was to use the abbreviation D S for east and south bound and U S for west and north bound. A great many of the operators do this yet. Assuming that your office call was "W" we will illustrate the proper way of reporting various trains in accordance with the new rules. Supposing train No. 52 arrived at your station at 9.20 a.m., and departed at 9.25 a.m., you would report it as follows:—

O S O S "W" No. 52 A 9.20 D 9.25 "W"

If train 55 arrived at your station at 10 a.m. and departed at 10.03, you would report it as follows:—

O S O S "W" No. 55 A 10K D 10.03 "W"

If train No. 5 and 6, which are passenger trains, passed your station without stopping, you would report them as follows:—

O S O S "W" No. 5 at 10.30 "W"

or O S O S "W" No. 6 by 7.15 "W"

If a passenger train is detained at your station longer than three minutes, you should report the detention after giving the

THE REPORTING OF TRAINS—Continued

regular train report. This will be done, assuming that they were there five minutes taking water at the tank. The report would then be as follows:—

O S O S "W" No. 5 A 10.30 D 10.35 Tkg Wtr "W"

The abbreviation O T, meaning that the train is on time, is used only in case some other station called you up and asked you for a certain train and if it was on time, you would simply say "O T." In reporting a train that was on time, however, to the Dispatcher, you would give the actual time, as it is necessary for the Dispatcher to write down the figures on his running sheet. Extra trains are designated by the engine number, and in reporting them, the rules say that the direction in which they are running should also be reported. Therefore, if extra "765 east," arrived at your station at 11.10 and departed at 11.12, you would report it as follows:—

O S O S "W" Ex 765 East A 10.10 D 10.12 "W"

Extra trains running west would be reported in the same way, using the word "west," instead of "east."

Since the reporting of trains is considered one of the most practical duties of an operator at a station, it is most important that you practice the reporting of different trains in order that you could transmit same from memory without an error. Practice the above examples thoroughly.

REPORTING EXERCISES.

NOTE.—Different office calls are used for practice work, and are shown in quotation marks.

1. O S O S "G" No. 5 A 9.50 D 9.52 "G."
2. O S O S "G" No. 6 A 4.20 D 4.23 "G."
3. O S O S "AY" No. 5 by 9.45 "AY."
4. O S O S "D" Ex 413 East A 11.10 D 11.13 "D."
5. O S O S "RS" Ex 1415 West by 9.23 "RS."
6. O S O S "DO" No. 6 A 5.20 D 5.30 Hot Box "DO."
(Hot Box represents cause of detention.)
7. O S O S "SE" Ex 963 East by 4.20 "SE."

Practice this exercise, using the same office calls, but different trains, until you could report any extra train, or regular train that may be represented on the time-table.

Instructors in Day School check here:—

REPORTING SEVERAL TRAINS AT ONE TIME.

Supposing that several trains had arrived and departed at your station within an hour, and you had not reported any of them, and assuming that the despatcher was calling you and when you answered him he said G A O S, which means "Go ahead with train reports," it would not be necessary for you in each case to go through the actual form of repeating O S twice to precede each train, but you would start in and say O S only once, reporting all trains in the one direction, and then all trains in the other direction, putting a comma between each train report and finally signing your office call. To illustrate:—

No. 54 arrived at 8:10, departed at 8:15; No. 64 arrived 8:30, departed 8:32; No. 55 arrived at 7:35, departed 7:40; extra engine 265 west arrived 8:10, departed 8:30; these trains would be reported as follows:—

O S "W" No. 54 A 8.10 D 8.15,—No. 64 A 8.30 D 8.32,—No. 55 A 7.35 D 7.40.—Ex 265 west A 8.10 D 8.30 "W"

In case the despatcher did not call you for this report, it would be advisable for you to call him once and sign your office call in order that you would be sure that he would get all these reports, as it might happen that if you reported these trains and he asked you for them again, it would mean extra work.

REPORTING TRAINS WITH TONNAGE.

All freight engines are scheduled to haul a certain amount of tonnage. The number of tons of freight to be hauled varies in accordance with the different grades. If a conductor had his full tonnage and he would refuse to lift any more cars at a station, and in case it was necessary to have important freight lifted, you would ask the despatcher for a message to the conductor to set out some car, in order to lift yours. In reporting the train after giving the arrival and the departure, you would also report a car lifted, together with its contents and destination. In case you had several cars to be lifted, and the conductor registered his train, he would book the tonnage he had in, and also his tonnage out; but if it were not necessary for him to set out any cars in order to lift, you would simply report the number of tons out, as the tonnage of the train when it arrived at your station would be known by the despatcher.

REPORTING TRAINS WITH TONNAGE—Continued

To illustrate:—Your office call is "W;" Train 54 arrived at your station at 9.20 a.m., with 1025 tons; you had 5 cars to be lifted, made up as follows: For Halifax 1 loaded with corn; Montreal 1 wheat; St. Johns 1 flour; Toronto 2 mdse. The tonnage for your 5 cars was 210. The train left at 10.10 a.m. You would report the train as follows:—

O S O S "W" No. 54 A 9.20 D 10.10 1235 tons, lifted Halifax 1 corn, Montreal 1 wheat, St. Johns 1 flour, Toronto 2 mdse. "W."

NOTE.—It is only necessary to report the tonnage out, but in case you did not know the tonnage in, you would only be able to report the tonnage of the cars lifted.

REPORT OF A FREIGHT TRAIN LEAVING A DIVISIONAL OR TERMINAL POINT.

When a train leaves a terminal or divisional point, it is necessary for the operator at that office to report to the despatcher as well as to the operator at the next terminal point the engine number, together with the number of cars, Conductor and Engineer, as well as the consists of the train, which is simply the number of loaded or empty cars for certain destinations. He also advises the despatcher in this report when the train was ordered and when it left and the cause of any detention. Thus if a train was ordered for 2 o'clock and did not leave until 3, it would be necessary to report why the train did not leave when it was ordered, because the train crew would receive pay from 2 o'clock. Assuming that train No. 54, Engine 763 was leaving London for Toronto with 10 loaded cars, and 5 empties, the train was ordered for 3.30, but owing to the train not being made up it did not leave until 4, the detention from 3.30 to 4 would be shown as waiting train. Supposing that the despatcher's call was "C," the next divisional point was "J U" and your office call was "W," you would report the above train after calling "C" and "J U," as follows:—

O S O S "W" No. 54 eng. 763 Swinarton, Moore, O D 3.30 D 4 K cars 10 & 5 contents 450, tare 275, tons 725, wgt trn.—has:—Guelph 1 corn, Smith's Falls 1 implements, Toronto 2 mdse, Montreal 2 mdse, Hochelaga 3 cattle, Parkdale 1 sheep, Galt 5 C P ety boxes. "W"

REPORT OF A FREIGHT TRAIN, ETC.—Continued

In the above form of report the name "Swinarton" has reference to the Conductor, "Moore" the engineer, "O D" for the train ordered at a certain time, "D" departed, "10 & 5" means 10 loads and 5 empties. Contents, has reference to the weight of the goods loaded in the car; Tare, the weight of the car itself, and by adding this together, gives you the total tons that the train is hauling. "Wtg trn," waiting for the train to be made up. The word "has" precedes what is known as the consists of the train, or what the train is loaded with. If the train had 40 cars loaded, you would send the contents of each car, as well as the destination.

Canadian Pacific Railway Company**CONSIST OF FREIGHT AND MIXED TRAINS**

Train	Eng	Left		
At	Date	191		
Loads	Empties	Contents	Tare	Equiv. tons
DESTINATION		No. of Cars	CONTENTS	
D		J	Q	
			No. of Red Cards Cars	
			K	

C. P. EMPTIES**FOREIGN EMPTIES**

Box H	Stock S	Flat F	Coal C	Refr R	Coke Racks	Box N	Stock NS	Flat U	Coal Y	Refr Z	Other OF
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Remarks**Fig. 3**

The above form, Fig. 3, will give you an idea of what a despatcher has to fill out at the time you are sending such a report. The heading of the form is filled out by the despatcher at the same time you are giving the destination with the number of cars and contents. Notice column K in this form. This has reference to rush cars that are red carded, and it is only terminal points and certain red-carded stations that are allowed to put these cards on such cars. Operators at terminal points in reporting the car with a red card on, would report it as follows:—

Toronto 1 potatoes red.

It is important that you practice the above forms until you can go through the exercise without an error.

REPORT OF A FREIGHT TRAIN, ETC. Continued

If you were working at a terminal or divisional point and a train were leaving another divisional point, the operator would call you as well as the despatcher, and you would write the report on a small "running sheet" that is provided for the purpose, together with the consists of the train on a separate piece of paper or on a message pad. This consists is handed to the yardmen, in order that they may know what cars are coming in on that train, and if they are through cars or not. When the train arrives at your terminal it is necessary to have switch-lists made out, in order that the yardmen may switch the train to advantage.

ARRIVAL REPORT.

When freight trains arrive at a terminal point the operator reports the time of arrival, together with the number of cars, loads and empties, such as 10 & 5, as well as the number of tons of coal consumed. The conductor of course books this in the register book. The report would then read, assuming your office call was "W" and train 55 had arrived with 10 loads and 5 empties and had consumed 12 tons of coal, as follows:

O S O S "W" No. 55 A 5.15, 10 & 5 coal 12 tons.

REPORT OF A PASSENGER TRAIN LEAVING A DIVISIONAL OR TERMINAL POINT.

When passenger trains leave a divisional or terminal point, the number or numbers of first-class cars, baggage and express, and the name of the sleeper is telegraphed in the consists, together with the engine number, conductor and engineer, and the number of cars in the train. We will suppose that No. 20 was leaving Owen Sound for Toronto with engine 308 with 4 cars. Assuming your office call was "O N" the report to the despatcher would be as follows:—

O S O S "O N" No. 20 Eng. 308 Scanlan Johnston D 2.25 cars 4 has:—

F. C. (first-class), 181, 183.—B. & E. (Baggage & Express) 501 S (Sleeper) Sheffield.

NOTE.—This consist shows the number of the first-class cars, together with the B. & E. and the name of the Sleeper.

ASSUMING A NEW POSITION.

When an operator has satisfactorily passed his examination with the Chief Despatcher, he is given a copy of the rules, a working time-table and a pass to wherever he is going. It will be your first duty to familiarize yourself with the working time-table, in order to understand when the regular trains are due at your station, when the first train is due in your regular working hours, if it is a passenger train, etc., and in assuming your duties, ascertain from the Agent the best way to handle the work, such as attending to the baggage, if many tickets are usually sold, and get as much information as possible about the run of the office, where the passenger tariffs, train registers, etc., are kept, together with any information regarding the handling of the wires.

STANDARD RAILWAY RULES.

In the front pages of the railway rule-book that is supplied to every employee in the station service, appears the heading "General Notice & General Rules," followed by the definitions and the regular train rules for single and double track. The information given in this instruction will be more clear to the student than if he had in his possession the regular rule-book.

The train rules will be numbered in **black faced type**, to correspond with the railway rule-book.

✱ When a star precedes any paragraph, it has reference to special instruction, in order to make the meaning of the rules more clear.

GENERAL NOTICE.

To enter or remain in the service is an assurance of willingness to obey the rules.

Obedience to the rules is essential to the safety of passengers and employees, and to the protection of property.

The service demands the faithful, intelligent and courteous discharge of duty.

To obtain promotion, capacity must be shown for greater responsibility.

Employees, in accepting employment, assume its risks.

GENERAL RULES.

A. Every employee whose duties are prescribed by these rules, must have a copy of them accessible when on duty.

Every employee whose duties are connected with the movement of trains must have a copy of the current time-table accessible when on duty.

B. Employees must be conversant with, and obey the rules and special instructions. If in doubt as to their meaning, they must apply to proper authority for an explanation.

C. Employees must pass the required examinations.

D. Persons employed in any service on trains are subject to the rules and special instructions.

E. Employees must render every assistance in their power in carrying out the rules and special instructions.

F. Any violation of the rules or special instructions must be reported.

G. The use of intoxicants by employees while on duty is prohibited. Their use or the frequenting of places where they are sold is sufficient cause for dismissal.

H. The use of tobacco by employees while on duty in or about passenger stations, or on passenger cars, is prohibited.

J. Employees on duty must wear the prescribed badge and uniform and be neat in appearance.

K. Persons authorized to transact business at stations or on trains must be orderly and avoid annoyance to patrons.

L. In case of danger to the Company's property, employees must unite to protect it.

M. Employees must always be vigilant to protect and must promptly report anything detrimental to the Company's interest.

N. When an employee leaves the service, all equipment supplied by the Company must be returned. The Company reserves the right to withhold from the wages due the employee the value of such equipment not returned.

O. Equipment, supplies and material must be properly and economically used and cared for. Scrap and other material of value must be turned in to the Company.

P. Unless authorized to do so, employees must not receive or pay out money on the Company's account or use the Company's credit.

GENERAL RULES Continued

Q. All accidents involving injuries to persons, or damage to track, structures or rolling stock, must be reported promptly by telegraph to the proper officer, and confirmed by mail. In cases of injury to persons the names and addresses of as many witnesses as possible must be obtained.

DEFINITIONS.

It is important and absolutely necessary for the student to be able to answer any of the following definitions before taking a regular position. In order to understand the various definitions given here, you will have to read them all through, in order that certain words given in one definition will be explained in another; memorize them, and be prepared to answer them whenever necessary. More definitions are given here than are given in the rule-book, but they are necessary for a beginner. Study them carefully.

* **MARKERS**—Are signals displayed on the rear car of a train to indicate the rear: by day, green flags; by night, green lights to the front and side, and red lights to the rear, except when the train is clear of the main track, when green lights must be displayed to the front, side and rear. (See Rule 19.)

* **CLEARANCE**—Is an authority over the signature of an operator for a train to leave a terminal point, or to leave a station when the train-order board is displayed at "stop."

* **TRAIN ORDERS**—Special orders, directing movements varying from, or additional to the time-table, issued over the signature of the train despatcher.

TRAIN.—An engine or more than one engine coupled, with or without cars, displaying markers.

REGULAR TRAIN.—A train authorized by a time-table schedule.

SECTION.—One of two or more trains running on the same time-table schedule, displaying green signals or for which green signals are displayed.

* Special Instructions not shown in rule-book.

DEFINITIONS—Continued

EXTRA TRAIN.—A train not authorized by a time-table schedule. It may be designated as:

“**WORK EXTRA**”—For a work train.

“**PASSENGER EXTRA**”—For an extra passenger train.

“**EXTRA**”—Any other extra train.

SUPERIOR TRAIN.—A train having precedence over another train.

TRAIN OF SUPERIOR RIGHT.—A train given precedence by train order.

TRAIN OF SUPERIOR CLASS.—A train given precedence by time-table.

TRAIN OF SUPERIOR DIRECTION.—A train in the direction in which regular trains are superior to trains of the same class in the opposite direction, as specified in the time-table.

NOTE.—Superiority by direction is limited to single track.

TIME-TABLE.—The authority for the movement of regular trains subject to the rules. It contains the classified schedules of trains with **special instructions** relating thereto.

TIME-TABLE SCHEDULE.—That part of a time-table which prescribes class, direction, number and movement for a regular train.

DIVISION.—That portion of a railway assigned to the supervision of a General Superintendent.

DISTRICT.—That portion of a railway assigned to the supervision of a Superintendent.

SUBDIVISION.—A part of a division so designated on a time-table.

MAIN TRACK.—A track extending through yards and between stations, upon which trains are operated by time-table or train order, or the use of which is controlled by block signals.

SINGLE TRACK.—A main track upon which trains are operated in both directions.

DOUBLE TRACK.—Two main tracks, upon one of which the current of traffic is in a specified direction, and upon the other in the opposite direction.

DEFINITIONS—Continued

THREE (OR MORE) TRACKS.—Three (or more) main tracks, upon any of which the current of traffic may be in either specified direction.

CURRENT OF TRAFFIC.—The movement of trains on a main track, in one direction, specified by the rules.

STATION.—A place designated on the time-table or by a sign board by name, at which a train may stop for traffic; or to enter or leave the main track; or from which fixed signals are operated.

INITIAL STATION.—A station at which a regular train is first timed on any subdivision is an initial station for that train.

PASSING TRACK.—A track auxiliary to the main track for meeting or passing trains, limited to the distance between two adjoining telegraph stations.

SIDE TRACK.—A track auxiliary to the main track, used for purposes other than for meeting and passing trains.

FIXED SIGNAL.—A signal of fixed location indicating a condition affecting the movement of a train.

YARD.—A system of tracks within limits defined by yard limit boards, or indicated by time-table, provided for the making up of trains, storing of cars, and other purposes, over which movements not authorized by time-table or by train order, may be made, subject to prescribed signals and rules.

YARD ENGINE.—An engine assigned to yard service and working within yard limits.

PILOT.—A person assigned to a train when the Engineer, or Conductor or both, are not fully acquainted with the physical characteristics, or running rules of the road, or portion of the road, over which the train is to be moved.

FIXED SIGNALS.**DEFINITIONS.**

SEMAPHORE.—A device consisting of a movable arm supported on a pole. The signal indications are given by the position of the arm. At night an additional indication is given by lights of prescribed colors, corresponding to the position of the arm. The arm is displayed to the right of the pole as seen from trains approaching in the direction in which it governs.

FIXED SIGNALS--Continued

BLADE.—That part of a semaphore arm which, by its position, gives the signal indications (by day).

ARM CASTING.—That part of a semaphore arm which, by its position, determines the color of the light which gives the additional night indications.

DISC SIGNAL.—A device consisting of a disc so supported that it may be displayed to view or withdrawn. The indications are given by the position of the disc. At night, an additional indication is given by lights of prescribed color, corresponding to the positions of the disc.

POLE.—The upright to which a signal is directly attached.

BRACKET POST.—An arrangement of main post with crossbeam upon which two or more poles are supported.

TARGET SIGNAL.—A disc supported in such a way that it may stand either parallel with or at right angles to a track on which it governs movements.

***SWITCH.**—Movable rails, used for transferring cars from one track to another. (See rule 104.)

***CROSS-OVER.**—Used to connect one main track with another, as on a double track.

AUTOMATIC BLOCK SIGNALS.**DEFINITIONS AND INDICATIONS.**

BLOCK.—A length of track of definite limits, the use of which by trains, is controlled by Block Signals.

BLOCK SIGNAL.—A fixed signal controlling the use of a block.

HOME BLOCK SIGNAL.—A fixed signal at the entrance of a block to control trains entering and using the block.

A semaphore arm standing horizontal or a disc displayed, indicates "stop." When in this position at night, a red light is displayed.

AUTOMATIC BLOCK SIGNALS--Continued

- A semaphore arm 60 degrees from the horizontal or a disc withdrawn, indicates "proceed." When in this position at night a green light is displayed.

DISTANT BLOCK SIGNAL.—A fixed signal used in connection with a Home Block Signal to regulate the approach thereto.

A semaphore arm standing horizontal, or a disc displayed, indicates "proceed with caution, prepare to stop at the Home Signal." When in this position at night, a yellow light is displayed.

A semaphore arm 60 degrees from the horizontal or a disc withdrawn, indicates "proceed." When in this position at night a green light is displayed.

INDICATOR.—A device (usually employed in connection with a switch) used to show the position of a signal to which it refers. A miniature arm or disc is displayed, which assumes the stop position when the home signal protecting the block is in the stop position or a train is closely approaching it. At main track crossovers, the indicators at the switch in each track relate to the signal protecting the block on the other track.

AUTOMATIC BLOCK SYSTEM.—A series of consecutive blocks in which the signals are operated by electric, pneumatic, or other agency, actuated by a train, or by certain conditions affecting the use of the block.

STATION PROTECTION SIGNAL.

- A signal used to protect trains occupying the main track at a station or in a yard, the normal indication of which is "proceed."

A semaphore arm standing horizontal or a disc displayed, indicates "stop." When in this position at night, a red light is displayed.

A semaphore arm 60 degrees from the horizontal or a disc withdrawn, indicates "proceed." When in this position at night a green light is displayed.

INTERLOCKING SIGNALS.

DEFINITIONS AND INDICATIONS.

INTERLOCKING.—An arrangement of switch, lock and signal appliances so inter-connected that their movements must succeed one another in a pre-determined order.

INTERLOCKING PLANT.—An assemblage of switch, lock and signal appliances interlocked.

INTERLOCKING STATION.—A place from which an interlocking plant is operated.

INTERLOCKING SIGNALS.—The fixed signals of an interlocking plant.

HOME SIGNAL.—A fixed signal governing movements over certain route or routes, and located at the point where trains are required to stop when the route is not clear.

A semaphore arm standing horizontal indicates "stop." When in this position at night a red light is displayed.

A semaphore arm 60 degrees from the horizontal indicates "proceed." When in this position at night a green light is displayed.

DISTANT SIGNAL.—A fixed signal used in connection with a home signal to regulate the approach thereto.

A semaphore arm standing horizontal indicates "Proceed with caution, prepared to stop at the home signal." When in this position at night a yellow light is displayed.

A semaphore arm 60 degrees from the horizontal indicates "proceed." When in this position at night a green light is displayed.

DWARF SIGNAL.—A low, small signal of semaphore type, used as a home signal, governing one or more diverging or unusual routes.

INTERLOCKING SIGNALS—Continued

POT SIGNAL.—A small revolving signal, used to indicate the position of a switch or as a substitute for a dwarf signal.

ROUTE.—The course of way taken by a train in passing from one point to another, especially a customary or predetermined course, or any one of several possible combinations of turn-outs or cross-overs by which a train may travel through an interlocking plant.

TRAIN RULES FOR SINGLE AND DOUBLE TRACK.

The train rules are numbered in black faced type and apply to single and double track:—

(a) When the number of the rule is shown without any reference to either single or double track, it means that it applies to both.

(b) The letter D prefixed before the number of the rule applies to Double Track only, as D-19.

NOTE.—In the railway examination for operators, the number of the rule where the answer to the questions should be found, is given, and you will understand how important it is to know the number of the rules, together with their meaning.

STANDARD TIME.

1. Standard Time obtained from the observatory will be telegraphed to all points from designated offices at 11.55 a.m. daily.

*A single dash, every alternate second, will be sent, commencing at 11.54 a.m., Eastern Time, until 11.54.50 a.m., when there will be a pause until 11.55 a.m., when a double dash will be sent every alternate second until 11.55.50 a.m., when there will be a pause until 11.56 a.m., then a quick double dash will be sent and the current closed.

*Special Instruction not shown in rule-book.

STANDARD TIME- Continued

2. Watches that have been examined and certified to by a designated Inspector, must be used by Train Masters, Road Foremen of Locomotives, Locomotive Foremen, Road Masters, Bridge and Building Masters, Conductors, Engineers, Firemen, Motormen, Train Baggage-men, Brakemen, Yard Masters and Yard Foremen and such other employees as the Railway Company may direct. The certificate in prescribed form must be renewed and filed with the Superintendent every January and July.

(Form of Certificate.)

CERTIFICATE OF WATCH INSPECTOR.

This is to certify that on 19.....
the watch of
employed as
on the Canadian Northern Ontario Railway was examined by me.
It is correct and reliable and in my judgment will, with proper
care, run within a variation of thirty seconds per week.

Name of maker
Brand
Number of movement
Open or hunting case.....
Metal of case
Stem or key winding

Signed

.....

Inspector.

Address

3. Watches of Conductors, Engineers and Motormen must be compared before starting on each trip, with a clock designated as a Standard Clock. The time when watches are compared must be registered on a prescribed form.

Employees who are required to use Standard Watches must submit them to a designated Inspector for comparison and record

STANDARD TIME—Continued

during the first and the third week of every month, or if no designated Inspector is accessible, during any such period as soon as possible thereafter.

They must not regulate them, or, unless they stop owing to failure to wind, set them themselves.

If a Standard Clock is not accessible, standard time must be obtained from Train Dispatcher, or by comparing time with a Conductor, Engineer or Motorman who have had access to a Standard Clock and registered.

TIME TABLES.

4. Each time-table, from the moment it takes effect, supersedes the preceding time-table. A train of the preceding time-table which has left its initial station, on any sub-division before the new time-table takes effect, must retain its train orders and complete the run by using the schedule of the train of the same number of the new time-table, unless that train is scheduled to leave its initial station on that subdivision within twelve hours after the new time-table takes effect, in which case, the train of the preceding time-table loses both right and schedule at the moment the new time-table takes effect, and thereafter may proceed only by train order.

A train of the new time-table which has not the same number on the preceding time-table, must not run on any sub-division until it is due to start from its initial station on that sub-division after the new time-table takes effect.

* Upon receipt of the new time table, destroy all old copies. Time-tables usually go into effect at one minute after twelve at midnight. Operators are expected to receipt for the new time-table, and in some cases it is necessary to wire the receipt, in order to show the dispatcher that you have received the new copy.

5. Not more than two times are given for a train at any station; where one is given, it is, unless otherwise indicated, the leaving time; where two, they are the arriving and leaving time.

* Special Instruction not shown in rule-book.

TIME TABLES—Continued

Unless otherwise indicated, the time applies to the switch where an inferior train enters the siding; where there is no siding it applies to the place from which fixed signals are operated; where there is neither siding nor fixed signal, it applies to the place where traffic is received or discharged.

Schedule meeting or passing stations are indicated by figures in **full faced type**.

Both the arriving and leaving time of a train are in full-faced type when both are meeting or passing times, or when one or more trains are to meet or pass it between those times.

When trains are to be met or passed at a siding extending between two adjoining stations, the time at each station will be shown in **full-faced type**.

Where there are one or more trains to meet or pass a train between two times, or more than one train to meet a train at any station, attention is called to it by small figures showing numbers of trains to be met or to pass.

D-5. In the last four paragraphs of Rule 5, the word "meet" or "meeting" is not applicable to double track, and is, therefore, the only noticeable difference.

6. The following signs in the time-table indicate:—

- "*" See foot note.
- "s" Regular stop
- "f" Flag stop to receive or discharge passengers or freight.
- "●" Stop for meals.
- "L" Leave.
- "A" Arrive.
- "D" Day telegraph station.
- "N" Night telegraph station.
- "T" Telephone station.
- "W" Water Station.
- "C" Coaling station.

SIGNALS.

7. Employees whose duties may require them to give signals, must provide themselves with the proper appliances, keep them in good order and ready for immediate use.

8. Flags of the prescribed color must be used by day, and lamps of the prescribed color by night.

9. Night signals are to be displayed from sunset to sunrise. When weather or other conditions obscure day signals, night signals must be used in addition.

VISIBLE SIGNALS.**10. Color Signals.**

Color	Indication
(a) Red	Stop
(b) Green	Proceed, and for other uses prescribed by the rules.
(c) Yellow	Proceed with caution, and for other uses prescribed by the rules.
(d) Green and white	Flag stop, see Rule 28.
(e) Blue	See Rule 26.

11. A fusee on or near the track burning red must not be passed until burned out. When burning yellow it is a caution signal.

12 HAND, FLAG AND LAMP SIGNALS

(Illustrated by diagram)

MANNER OF USING

INDICATION

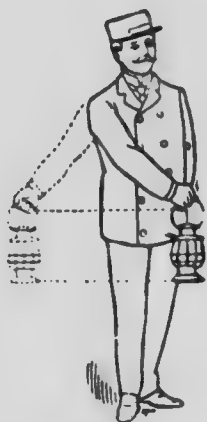


Fig. 1

(a) Swung across the track

Stop



Fig. 2

(b) Raised and lowered vertically.

Proceed

HAND, FLAG AND LAMP SIGNALS—Continued

MANNER OF USING

INDICATION

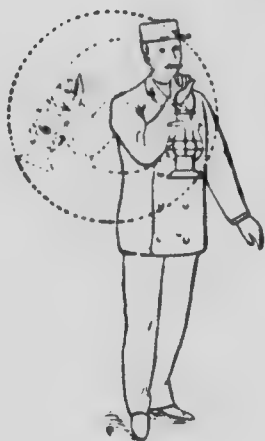


Fig. 3

(c) Swung vertically in a circle at half arm's length across the track when the train is standing.

Back

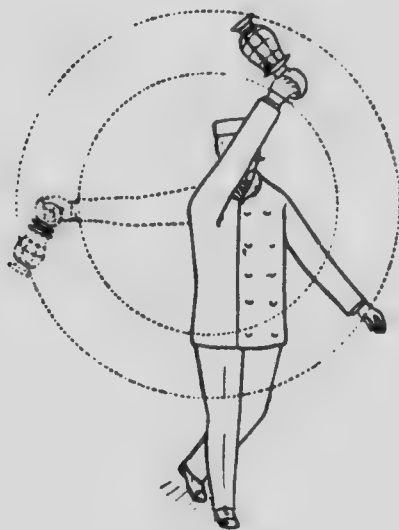


Fig. 4

(d) Swung vertically in a circle at arm's length across the track when the train is running.

Train has parted

HAND, FLAG AND LAMP SIGNALS--Continued

MANNER OF USING

INDICATION



Fig. 5

(e) Swung horizontally above the head when the train is standing.

Apply air brakes



Fig. 6

(f) Held at arm's length above the head when the train is standing.

Release air brakes

13. Any object waved violently by any one on or near the track is a signal to stop.

AUDIBLE SIGNALS.**14. Engine Whistle Signals.**

NOTE.—The signals prescribed are illustrated by "o" for short sounds, "—" for longer sounds. The sound of the whistle should be distinct, with intensity and duration proportionate to the distance signal is to be conveyed.

Sound	Indication
(a) o	Stop. Apply brakes.
(b) — —	Release brakes, or ready to proceed.
(c) — o o o	Flagman go out to protect rear of train.
(d) — — — —	Flagman return from west to south.
(e) — — — — —	Flagman return from east to north.
(f) — — —	When running, train parted ; to be repeated until answered by the signal prescribed by Rule 12 (d). Answer to 12 (d).
(g) o o	Answer to any signal not otherwise provided for.
(h) o o o	When train is standing, back. Answer to 12 (c) and 16 (c). When train is running, answer to 16 (d).
(j) o o o o	Call for signals.

AUDIBLE SIGNALS -Continued

Sound	Indication
(k) - o o	To call attention of extra trains and of trains of the same or inferior class or inferior right to signals displayed for a following section.
(l) -- - o o	Approaching public road crossings at grade and at whistle posts.
(m)	Approaching stations, and as prescribed by Rule 31.
(n) o -	When double heading, air brakes have failed on leading engine and second engine is to take control of them.
	Answer to 14 (n); to be given by second engine as soon as it has control of air brakes.
(o) o o -	Answer to 14 (k).

A succession of short sounds of the whistle is an alarm for persons or animals on the track.

TORPEDO SIGNALS.

15. The explosion of one torpedo is a signal to stop; the explosion of two not more than 200 and not less than 100 feet apart is a signal to reduce speed, and look out for a stop signal.

Torpedoes must not be placed near stations or public crossings, nor where persons are liable to be injured by them.

16. COMMUNICATING SIGNALS.

Sound	Indication
(a) Two	When train is standing, start.
(b) Two	When train is running, stop at once.
(c) Three	When train is standing, back.
(d) Three	When train is running, stop at next station.
(e) Four	When train is standing, apply or release air brakes.
(f) Four	When train is running, reduce speed.
(g) Five	When train is standing, call in flagman.
(h) Five	When train is running, increase speed.
(i) Six	When train is running, increase steam heat.
(j) Seven	When train is running, release air brakes, or sticking brake.

TRAIN SIGNALS.

17. A headlight will be displayed to the front of every train by night, but must be concealed when the train turns out to meet another and has stopped clear of main track with switches closed, or is standing to meet trains at the end of double track, or at junctions, and switches properly set for the approaching train.

D-17. A headlight will be displayed to the front of every train by night, but must be concealed when the train is standing to meet trains at the end of double track or at junctions, and switch properly set for the approaching train.

18. Yard engines will display the headlight to the front and rear by night. When not provided with a headlight at the rear, two white lights must be displayed. Yard engines will not display markers.

Under conditions not requiring display of markers, road engines without cars will display a white light on the rear of tender by night. (See Fig. 1.)

19. The following signals will be displayed, one on each side of the rear of every train, as markers to indicate the rear of the train: by day, green flags; by night, green lights to the front and side and red lights to the rear, except when the train is clear of the main track, when green lights must be displayed to the front, side and rear. (See Figs. 2, 3, 4, 5 and 6.)

TRAIN SIGNALS Continued

D-19. The following signals will be displayed, one on each side of the rear of every train as markers, to indicate rear of train: by day green flags; by night to the front and side green lights; by night to the rear, if the train is running with the current of traffic, red lights, if standing on passing track clear of main track, green lights; if running against the current of traffic, a green light on the inside and a red light on the opposite side. The lights displayed to the rear must be changed from green to red before a train fouls the main track when leaving a passing track, or returns to the main track with the current of traffic. (See Fig. 7.)

Where the cupola of a caboose is provided with indicators for designating the train, the proper indication must be shown and must be removed as soon as the run is completed.

20. All sections except the last will display two green flags, and in addition, two green lights by night, in the places provided for that purpose on the front of the engine. (See Figs. 8, 9, 10, 11.)

21. Extra trains will display two white flags, and in addition, two white lights by night, in the places provided for that purpose on the front of the engine. (See Figs. 12, 13, 14, 15.)

22. When two or more engines are coupled, the leading engine only shall, unless otherwise directed, announce the signals as prescribed by Rule 14, and display the signals as prescribed by Rules 20 and 21.

23. One flag or light displayed where in Rules 19, 20, and 21 two are prescribed will indicate the same as two; but the proper display of all train signals is required.

24. When cars are pushed by an engine (except when shifting or making up trains in yards) a white light must be displayed on the front of the leading car by night. (See Figs. 16, 17.)

25. Each car on a passenger train must be connected with the engine by a communicating signal appliance.

26. A blue flag by day and a blue light by night, displayed at one or both ends of an engine, car or train, indicates that workmen are under or about it; when thus protected, it must not be coupled to or moved, and other cars must not be placed on the same track so as to intercept the view of the blue signals, without first notifying the workmen.

Workmen will display the blue signals and the same workmen are alone authorized to remove them.

DIAGRAMS OF TRAIN SIGNALS

(See Rules 18 to 24 inclusive)

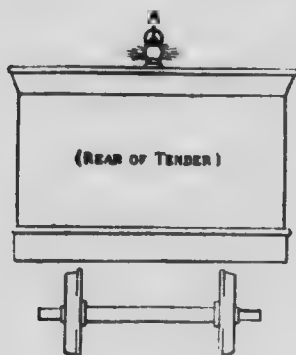


Fig. 1

**Engine Running Backwards by Night
Without Cars or at the Front of
a Train Pulling Cars.**

White light at A. See Rule 18.

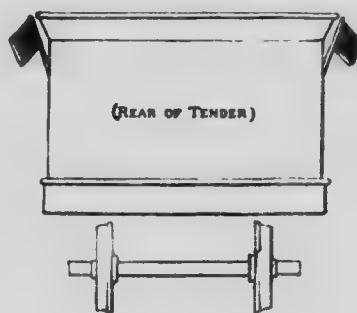


Fig. 2

**Engine Running Forward by Day,
Without Cars or at the Rear of
a Train Pushing Cars.**

Green flags as markers. See Rule 19.

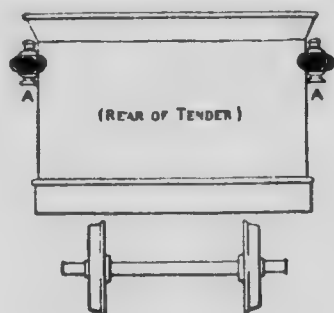


Fig. 3

**Engine Running Forward by Night,
Without Cars or at the Rear of
a Train Pushing Cars.**

Lights at A A as markers showing green
toward engine and side and red to
rear. See Rule 19.

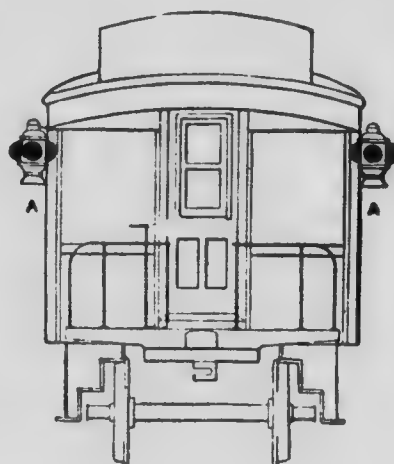


Fig. 4

**Rear of Train by Night While
Running.**

Lights at A A as markers, showing green
toward engine and side and red to
rear. See Rule 19.

DIAGRAMS OF TRAIN SIGNALS—Continued

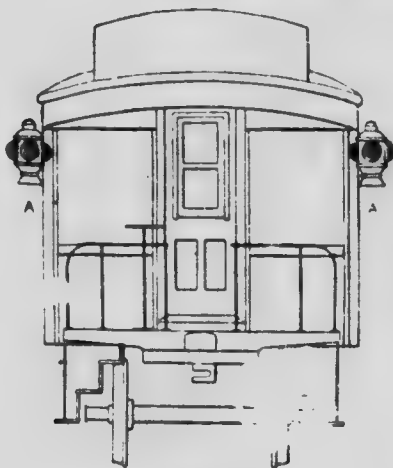


Fig. 5

Rear of Train by Night when on Siding to be Passed by Another Train

Lights at A A as markers, showing green toward engine side and to rear. See Rule 19.

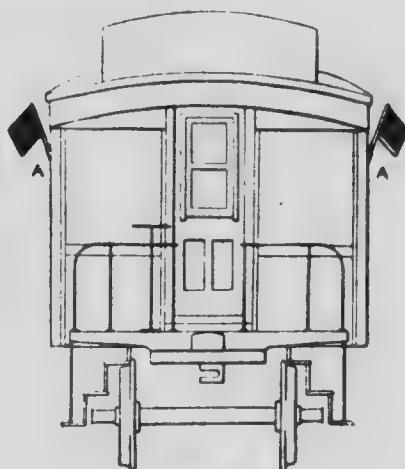


Fig. 6

Rear of Train by Day.

Green flags at A A as markers

See Rule 19.

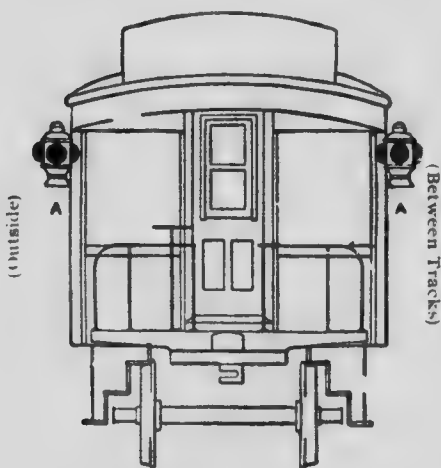


Fig. 7

Rear of Train by Night Running Against the Current of Traffic

This illustration is for a road which uses the right hand track.

Lights at A A as per Rule 19-19.

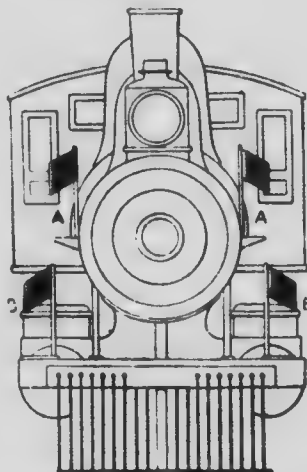


Fig. 8

Engine Running Backward by Day Without Cars or at the Rear of a Train Pushing Cars, and Displaying Signals for a Following Section.

Green Flags at A A. See Rule 20

Green Flags at B B, as markers See Rule 19.

DIAGRAMS OF TRAIN SIGNALS--Continued

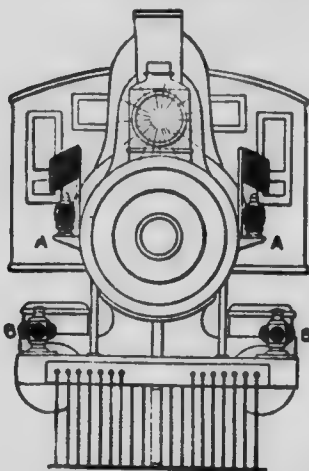


Fig. 9

Engine Running Backward by Night, Without Cars or at the Rear of a Train Pushing Cars, and Displaying Signals for a Following Section.

Green flags and green lights at A A. See Rule 20. Lights at B B as markers, showing green at side and in direction engine is moving, and red in opposite direction. See Rule 19.

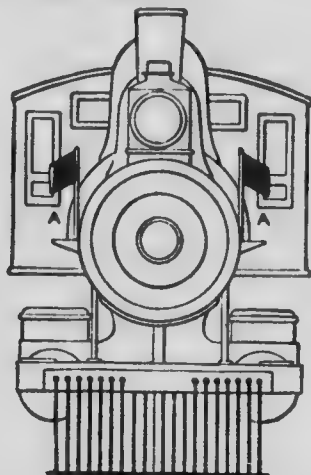


Fig. 10

Engine Running Forward by Day Displaying Signals for a Following Section.

Green flags at A A. See Rule 20.

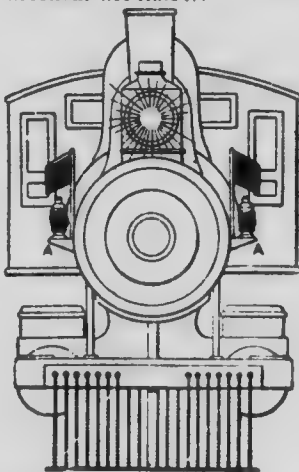


Fig. 11

Engine Running Forward by Night Displaying Signals for a Following Section.

Green flags and green lights at A A. See Rule 20.

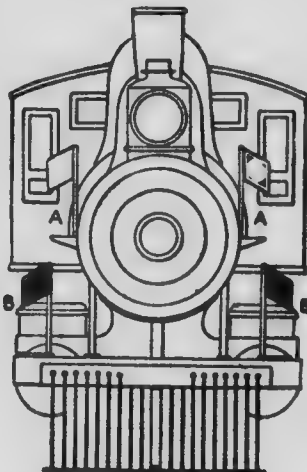


Fig. 12

Engine Running Backward by Day as an Extra Train, Without Cars or at the Rear of a Train Pushing Cars.

White flags at A A. See Rule 21. Green flags at B B as markers. See Rule 19.

DIAGRAMS OF TRAIN SIGNALS--Continued

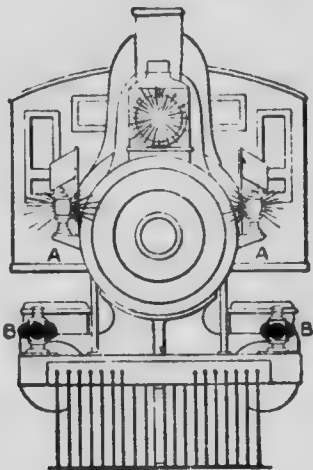


Fig. 13

**Engine Running Backward by Night
as an Extra Train, without cars
or at the Rear of a Train
Pushing Cars.**

White flags and white lights at A A.
See Rule 21.

Lights at B B, as markers, showing green
at side and in direction engine is
moving and red in opposite direction.
See Rule 19

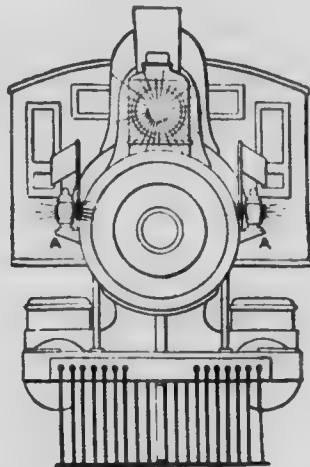


Fig. 14

**Engine Running Forward by Night
as an Extra Train.**

White flags and white lights at A A.
See Rule 21.

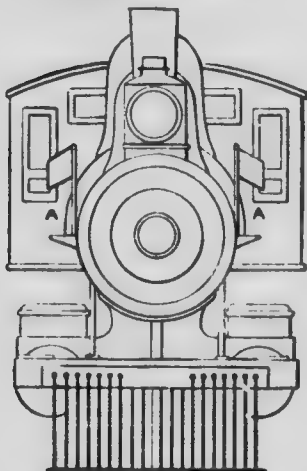


Fig. 15

**Engine Running Forward by Day as
an Extra Train.**

White flags at A A.
See Rule 21.

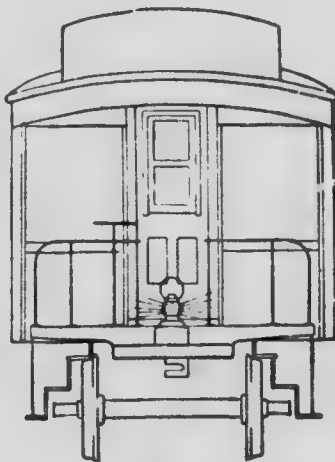


Fig. 16

**Passenger Cars Being Pushed by an
Engine at Night.**

White light on front of leading car.
See Rule 24.

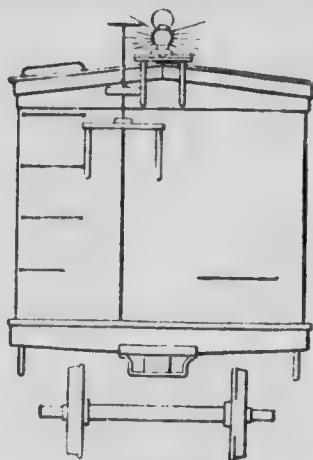


Fig. 17

DIAGRAMS OF TRAIN SIGNALS--

Continued

**Freight Cars Being Pushed by an
Engine by Night.**

White light on front of leading car.
See Rule 24.

USE OF SIGNALS.

27. A signal imperfectly displayed, or the absence of a signal at a place where a signal is usually shown, must be regarded as a stop signal, and the fact reported to the proper officer.

28. A combined green and white signal is to be used to stop a train only at the flag stations indicated on its schedule. When it is necessary to stop a train at a point that is not a flag station on its schedule, a red signal must be used.

29. When a signal (except a fixed signal) is given to stop a train, it must, unless otherwise provided, be acknowledged as prescribed by Rule 14 (g) or (h).

30. The engine bell must be rung when an engine is about to move, and while moving about stations.

31. Signal 14 (l) must be sounded at least 80 rods ($\frac{1}{4}$ mile) from every public road crossing at grade, and the engine bell be kept ringing until the crossing is passed.

Signal 14 (l) must be sounded at every whistle post.

Signal 14 (m) must be sounded one mile from stations, watering and fueling points, junctions, the end of double track, draw-bridges and railway crossings at grade.

Signal 14 (k) must be sounded by a train displaying green signals for a following section, to call attention of extra trains or trains of the same or inferior class or inferior right to signals displayed, and must hear the answer 14 (o), or stop and notify them of green signals displayed.

USE OF SIGNALS- Continued

D-31. The ruling in the fourth paragraph of Rule 31 is changed as follows for double track:—

Signal D-14 (k) must be sounded by a train displaying green signals for a following section, to call attention of trains in the same direction to signals displayed, and must hear the answer D-14 (o), or stop and notify them of green signals displayed.

32. The unnecessary use of either the whistle or the bell is prohibited. They will be used only as prescribed by rule, or statute, or to prevent accident.

33. Watchmen stationed at public road crossings must use green signals to prevent persons and vehicles from crossing the track when trains are approaching. Red signals must be used by them only when necessary to stop trains.

34. In emergency cases when track is suddenly found defective, any employee shall by the use of flags, lights, torpedoes, fuses or other signals, use every effort possible to stop trains in both directions.

35. A yellow flag or a yellow light placed beside the track on the same side as the engineer of an approaching train, indicates that the track 3,000 feet distant is in condition for speed of but six miles an hour unless otherwise instructed, and the speed of a train will be controlled accordingly. A green flag or a green light placed beside the track, on the same side as the Engineer of an approaching train, at a point beyond the slow track, indicates that full speed may be resumed.

A "SLOW" sign placed beside the track on the same side as the Engineer of an approaching train, may be used to mark a point where a slow order is in effect.

*This slow sign is simply a board with the word "slow" printed on it, and will be noticed on dangerous curves. The letter "W" printed on boards on the right hand side of the track to approaching trains, is a reminder for engineers to whistle. (See Rule 14 (1).

36. A red or yellow fusee, as the case may require, will be used for protection of a train which is not making the speed required by schedule or train order and is liable to be overtaken by a following train.

*Special Instruction not shown in rule book.

TEST QUESTIONS.

(Part A.)

NOTICE.—Send in answers to Part A first, and while this is being criticised, thoroughly review the instruction paper before sending in Part B. This is important.

1. What is a Railway Telegram? Describe the order of transmitting same.
2. (a) In sending railway messages, what telegraphic signals are transmitted, but not copied by the receiving operator?
(b) After receiving a message, what does the receiving operator write on the blank?
3. (a) In receiving a message, if you did not get the address, what abbreviation would you make in breaking?
(b) What abbreviation would you make if you did not receive the sending operator's personal signal, also the signature?
4. What is a "Running Sheet?"
5. (a) When should a train be reported at your station?
(b) Illustrate the train report of No. 65 with your office call "G."
6. Illustrate the report of train No. 52 arriving and departing at your station, lifting one car hogs, Parkdale; one potatoes, St. John, and one wheat, Montreal.
7. Give an illustration of the order of reporting a freight and passenger train leaving a terminal point. The freight train has five loaded cars, two empty flat cars and one empty box. Contents 105 tons. Tare 115. Total, 220 tons.
8. (a) Do you understand the general notice and general rules?
(b) What is expected of you when the meaning of any rule or special instruction is not clear to you?

TEST QUESTIONS—Continued

9. What are markers? A Clearance? Train Orders?
10. (a) What is a train? A Regular Train? A Section? An Extra Train?
- (b) How may an extra train be designated?
- (c) What is a superior train? A train of superior right? A train of superior class? A train of superior direction?
- (d) How is superiority by direction limited?
11. (a) What is a Time-Table? A Time-Table Schedule? A Division? A District? A Sub-division? A Main Track? A Single Track? A Double Track? Three "or more" tracks?
- (b) What is the meaning of the current of traffic?
- (c) What is a Station? An Initial Station? A Passing Track? A Side Track? A Fixed Signal? A Yard?
12. How is standard time given, and at what hour?
13. (a) Does each time-table, the moment it takes effect, supersede the preceding time-table?
- (b) Upon receipt of new time-tables, how must old copies be treated?
- (c) May a train on the preceding time-table leave its initial station on any sub-division after the hour the new time-table takes effect?
- (d) How will a train of the new time-table, which has not the same number on the preceding time-table, be governed after the new time-table takes effect?
14. (a) Where but one time is given for a train at a station, what does it indicate?
- (b) Where two times are given, what do they indicate?
- (c) Unless otherwise indicated, where does the time apply?
- (d) How are schedule meeting and passing points indicated in the time-table?

TEST QUESTIONS.

(Part B.)

1. (a) When the arriving and leaving time of trains are shown in full faced time in the time-table, what do they indicate?
- (b) When trains are to be met or passed at a siding extending between two adjoining stations, how is the time at each station shown in the time-table?
- (c) When there are one or more trains to meet or pass a train between two times, or more than one train to meet a train at a station, how is attention called to it? (5.)
2. What do the following signs in the time-table indicate:—
 "S" "P" "L" "A" "D" "X" "T"
 "W" "C" (6.)
3. (a) With what will employees whose duties require them to give signals, provide themselves? (7.)
- (b) In what condition must they be kept?
4. (a) What signals are used by day? By night? (8.)
- (b) When are night signals to be used? (9.)
5. What does red indicate? Green? Yellow? Green and white? Blue? (10.)
6. (a) When may a fusee on or near the track, burning red, be passed?
- (b) When a fusee is burning yellow, what does it indicate? (11.)
7. What is a hand flag or a lamp signal to stop? To proceed? To back up? That train has parted?
8. (a) What do the following sounds of engine whistle indicate? One short? Two long? One long followed by three short? Four long? Five long? Three long? Two short? Three short? Four short?

TEST QUESTIONS--Continued

- (b) One long followed by two short? Two long followed by two short? One long? One short followed by one long? Two short followed by one long? A succession of short sounds?
9. What does the explosion of one torpedo indicate? (15.)
10. Where must torpedoes not be placed?
11. (a) What signals are required on the rear of every train, as markers by day?
- (b) By night?
- (c) What do markers indicate? (19.)
12. What do two green flags by day and in addition two green lights by night indicate? (20.)
13. What do two white flags by day, and in addition, two white lights by night on the front of an engine, indicate? (21.)
14. (a) What does a blue flag by day and a blue light by night displayed at one or both ends of an engine, car or train indicate? (26.)
- (b) When thus protected, what is required?
- (c) Who will display the blue signals, and who alone is authorized to remove them?

Contents of First Eight Records

"The National Automatic Telegraph Transmitter Company Valparaiso Ind. Introductory Record.

This invention is the result of years of study by Mr R W Elam.

A great number of people are of the opinion that the railway or commercial telegraph office is the proper place for a student to undertake the study of telegraphy. This opinion is erroneous in the extreme inasmuch as the speed in an office is entirely too fast for a student. While it is true that a great number learn telegraphy through this channel it is also true that a greater number fail. Undertaking to learn telegraphy in an office is similar to a child undertaking to learn his A B C's in a university.

It was with these facts in view that set Mr Ellam to thinking of some plan to overcome this difficulty and the promoter of his invention feels that he has accomplished the desired result.

The National Automatic Telegraph Transmitter will not only teach the student at a speed within reason but will give him records, the characters of which have been made or rather sent by the hand of an experienced telegraph operator. G M D"

G M D™

"The National Automatic Telegraph Transmitter Alphabet Record."

a a a a e e i i m m q q u u
b b b b f f j j n n r r v v
c c c c g g k k o o s s w w
d d d d h h l l p p t t x x

"The National Automatic Telegraph Transmitter Valparaiso Ind. Record One from pages 37, 38 and 39 Telegraph Instructor.

& z y r e o 6 p h s i e
 & z y r e o 6 p h s i e
 & z y r e o 6 p h s i e
 & z y r e o 6 p h s i e

t t t t
 l l l l
 m m m m
 5 5 5 5
 0 0 0 0
 a a a a
 u u u u
 v v v v
 4 4 4 4
 n n n n
 d d d d

 x x x x

(1)

A rolling stone gathers no moss
 Every cloud has a silver lining
 Time and tide wait for no man
 A rolling stone gathers no moss

NINTH EXERCISE

86	921	3 255	72 400	856 000
86	921	3 255	72 400	856 000

TENTH EXERCISE

$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$
$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$
$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$

G M D"

"The National Automatic Telegraph Transmitter Valparaiso Ind.

Record two—sending. While the Automatic Telegraph Transmitter fulfills every requirement in so far as receiving is concerned sending should not be overlooked. A great many are of the opinion that sending is easily attained and receiving quite difficult. This idea is wrong, the fact being that sending is equally important.

All good senders are invariably good receivers while a great number of those good at receiving are poor at sending.

The student should bear in mind in the beginning that accuracy and not rapidity is the most essential requirement.

In learning to send speed will be unconsciously attained. The student should follow closely all of that upon pages 33 to 36 inclusive in the Telegraph Instructor. After a good free movement has been attained without undertaking to make any letters, the letters, characters, numerals and exercises should be undertaken as outlined upon pages 37, 38, 39 and 40 in the same book. After a proficiency has been attained in the foregoing, receiving should be undertaken.

G M D"

“The National Automatic Telegraph Transmitter Valparaiso Ind.

Record three, from page 106 Telegraph Instructor.

Standard Railway Rules as Recommended by the American Railway Association.

General Rules. 1 Employees whose duties are prescribed by these rules must provide themselves with a copy.

2 Special instructions, given by proper authority, must be observed while in force.

3 Employees are required to be conversant with and obey the rules and special instructions. If in doubt as to their meaning they must apply to the proper authority for an explanation.

4 Employees must pass the required examinations.

5 Persons employed in any service on trains are subject to the rules.

6 Employees while on duty must wear the prescribed badge or uniform and be neat in appearance.

7 The use of intoxicants while on duty is prohibited. Their habitual use or the frequenting of places where they are sold is sufficient cause for dismissal.

8 The use of tobacco by employees when in or about passenger stations or by passenger trainmen when on duty is prohibited.”

“The National Automatic Telegraph Transmitter Valparaiso Ind.

Record four, from pages 111 and 112 Telegraph Instructor.

Signal Rules. Signals 323. All employees whose duties may require them to give signals must provide themselves with the proper appliances and keep them in good order and always ready for immediate use.

324 Flags of the proper color must be used by day and lamps of the proper color by night or whenever from fog or other cause the day signals cannot be clearly seen.

325 Red signifies danger and is a signal to stop.

326 Green signifies caution and is a signal to go slowly.

Flags of the proper color must be used of day and night and cannot be clearly seen.

- 325 Red signifies danger and is a signal to stop.
- 326 Green signifies caution and is a signal to go slowly.
- 327 White signifies safety and is a signal to go on.
- 328 Green and white is a signal to be used to stop trains at flag stations for passengers or freight.

329 Blue is a signal to be placed on the engine to forbid its being moved."

"The National Automatic Telegraph Transmitter Valparaiso Ind.

Record five, Train Orders.

Order no 31
to C & E no 28 V
to C & E 1st no 63 K S

No 28 eng 178 will wait at Hamlet until six twenty-five 625 Pm at Grovertown until six thirty 630 Pm for 1st no 63 eng 199 C D L G M D.

Order no 32
To C&E 15 QS
To C&E Exa 77 East P.

Exa 77 East has right of way over no 15 eng 267 Plymouth to Warsaw and can have until twelve 12 midnight to make Pierceton for no 15 eng 267 C D L G M D.

Order no 33
to C&E no 22 HN
to C&E no 15 GL.

Do not regard note B on schedule. No 22 eng 179 and no 15 eng 267 will meet and pass at Selby C D L G M D.

Order no 34
to C&E no 25 RN
to C&E 2nd no 72 HA
to C&E 1st no 74 KA.

No 25 eng 209 will run one 1 hour and five 5 mins late Bourbon to Hanna and will wait
at Donelson until six ten 610 PM at Grovertown until six fifteen 615 PM for 2nd no 72 eng 6
& 1st no 74 eng 3 C'D L G M D. G M D"

"The National Automatic Telegraph Transmitter Valparaiso Ind.

Record six, commercial messages.

City CH DO ck 10 paid
fm Hiawatha Kans 18
to C L Barclay & Son,
Valparaiso Ind.

Ship us the flour by fast freight immediately entirely out
sig Davis & Co.

hr City CH DO ck 10 paid
fm Davenport Iowa 18
to Lincoln & Co,
Valparaiso Ind.

We will accept your offer on five thousand bushels potatoes
sig Gardner & Co.

abr City CH DO ck 9 Collect
fm Muskegon Mich 18
to Danielson & Cook

chr City CH DO ck 9 Collect
fm Muskegon Mich 18
to Danielson & Cook,
Valparaiso Ind.

The two cars lumber left here this morning
sig Ludlow & Co.

City CH DO ck 9 Paid
fm Berea Ohio 18
to Holmes & Weaver,
Valparaiso Ind.

The car dimension stone left here yesterday rubble today
sig Atwater & Barnes.

City CH DO ck 10 Paid
fm Kankakee Ill 18
to Thompson & Cornish,
Valparaiso Ind.

We must have three cars coal daily or arrange elsewhere
sig Illinois Mfg Co.

City CH DO ck 9 Paid
fm Hammond Ind 18
to T S Donavin & Co,
Valparaiso Ind.

Your provisions left here this morning in regular car
sig Hammond Provision Co. G M D"

SUPPLIES FOR STUDENTS

We always keep on hand the necessary supplies, so that students need not go outside the school to get anything they require in connection with their studies.

A student beginning his course in the Day School pays \$2.00 for his instruction books and a supply of stationery. The stationery consists of scribbling books, writing pads, speed examination pad, two pencils, pen holder, two pen points, in addition to having the regular station forms which are supplied in the stations. The message blanks, etc., are not required until such time as a student gets in the senior class.

The following articles may be purchased any time through the school:—

Telegraph Learner's Outfit, including dry cell battery and wire.....	\$3.00
Individual Telegraph Key (Leg), each.....	1.75
Individual Telegraph Key (Legless), each.....	2.25
Individual Telegraph Sounder, each.....	2.75
Bell Wire for connecting instruments, 25 feet for.....	.15
Blue Vitrol (for Gravity Battery), per lb.....	.15
Jar for Gravity Battery.....	.40
Gravity Battery, complete, with copper, zinc and Blue Vitrol, 1 lb.....	1.25
Dry Cell Battery, each	.25
Fountain Pens, Special.....	1.50
Stylusses for writing train orders, each.....	.25
Scribbling Pads, each	.05
Examination Pads (3 for 25c) each.....	.10
Pen Holders, each	.05
Pencils, 2 for.....	.05
Twentieth Century Telegraph Manual, by Frederick L. Meyer, Chicago	1.50
Penmanship Book, Part 1.....	.15
Penmanship Book, Part 2.....	.25
Mecrograph (A Hand Sending Instrument).....	9.00
Automatic Telegraph Transmitter (for home study purposes).....	25.00

